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for
Sanitary Plumbing

By
JOHN W. BRUCE



Reprinted from the Fifth Annual Report

OTTAWA—1914

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Necessity for Uniform Laws for Sanitary Plumbing

BY

JOHN W. BRUCE

General Organizer, United Association of Plumbers and Steamfitters

MR. CHAIRMAN and gentlemen: I appreciate the opportunity to appear before this Commission for the purpose of presenting for your consideration a subject matter of great importance to the welfare of the nation.

One of the essential features in the application of sanitation to the general health of the community is efficient methods of sanitary plumbing, heating and ventilation. In aiming to protect and prolong the life of the people, our efforts should be such that legislation upon this important problem may be in the best interests of the people in general.

Sanitation and ventilation have gained world-wide prominence through the endeavours of the medical profession, scientists, sanitary engineers and public bodies, for a number of years, to introduce measures that could be accepted as standards of efficiency, and by the earnestness of such men, there has been evolved a sanitary system based on fundamental scientific principles that can be adopted practically in any portion of the world. For the absolute protection of public health, legislation should be so directed as to secure the highest degree of efficiency in our sanitary system. Like all legislation of a restrictive nature, we find a great deal of opposition from those who are ignorant of the real value of such legislation, but with a process of education in the adoption and enforcement of restrictive law, by which the future life of the nation is protected and benefited, it is then readily welcomed as being essential to the national welfare. And it is with this view that I introduce this subject for the consideration of the Commission.

GENERAL CONDITIONS IN CANADA

In the Dominion of Canada we have no generally recognized standards regarding sanitary plumbing and ventilation, but are governed by a multiplicity of laws and by-laws, adopted by the governing bodies of our cities and towns and enforced according to their own interpretations. In the year 1887, Toronto adopted the first plumbing ordinance in Canada. This was followed by many others, until to-day the majority of our cities and towns have some form of ordinance. In some, we find a recognition of splendid principles making for effectiveness, but rendered void because of non-enforcement. In many others no recognition whatever that any law exists, with the result that even sanitary plumbing is installed in such a way that it becomes a menace to public health.

Alberta, New Brunswick, and Saskatchewan are the only provinces who have faced this problem seriously and have been progressive enough to adopt general laws. These laws, however, suffer to-day from lack of enforcement, though I believe that in the future their value will be more fully recognized.

In the majority of our larger cities, there is a desire to study and meet the demands of the plumbing business, so much so that we continually see them amending their by-laws to meet changed conditions. Many have adopted the plan of examining and licensing the men engaged in this occupation, with such beneficial results that many others contemplate following the same procedure, which is claimed as an essential point in placing sanitary plumbing on a proper recognized basis in its relation to health. From the Atlantic to the Pacific we have many varieties of sanitary plumbing, some a distinct credit to the forethought of our Boards of Health and Municipal Councils, and others an absolute disgrace to the name of sanitation. Some of the abuses call for serious consideration. Not long ago in a public school building, I saw sanitary drinking fountains with their waste pipes connected directly, without traps, to a two-inch soil waste. Many kitchens are contiguous to sanitary conveniences. Toilet accommodation is often placed in unventilated rooms contiguous to bedrooms. These abuses are of such a serious nature that they urgently demand attention.

In the city of Montreal, the first city of the Dominion, with a population estimated at 500,000, the general conditions of sanitary plumbing are a disgrace to civilization. While some buildings of the better type conform to higher standards, it is due more to the demands of architects than the requirements of the law. One can readily understand the high mortality rate of twenty per thousand,

when one sees the city's supposed system of sanitation. We see the ridiculous situation here, of examining men, who are to engage in the business, and then allowing them practical freedom in the installation of work, and many are installing work who have not even passed an examination. There is a measure of inspection of the plumbing, but without any test as to its fitness for the demands on it, by men, some of whom are not practical and have not the necessary knowledge to qualify them for such position of trust.

Then we have the city of Toronto, with an estimated population of 400,000 and a death rate of 12.8 per thousand. That city has a rigid by-law embracing the highest principles of sanitation, although recognizing some very low standards of materials that have been rendered obsolete for years, and a complete system of inspection, aiming to fulfil the requirements of the law so that the general health of the community is protected. Winnipeg, Calgary, Edmonton, Vancouver, Victoria and Halifax, each have their own ordinances recognizing certain principles, but often incorporating particular ideas and fads of individuals, who for the time being have had their fads added to the by-laws. But the bad conditions prevailing in some of our large industrial centres is a very serious matter. The city of Hamilton, with a population of over 80,000 people, without any recognized system, may be cited as an example, and also towns like London, Guelph, Kingston, Galt and Windsor, in Ontario, Quebec and Three Rivers in Quebec, Brandon and Portage la Prairie in Manitoba, Fernie and Kamloops in British Columbia, Amherst and Truro in Nova Scotia. The poor standard of work permitted, with practically no ordinances governing the work, all tend to lower the standards of efficiency in relation to sanitation. These large centres embrace a large working class population, which suffers most from the unsatisfactory conditions.

Smaller cities and towns will probably become large centres, and means to improve sanitary conditions by a universal standard should be the aim of all. Even now, with the advance of sanitary education, we see many of our cities working on amendments to their laws. Too frequently they lack knowledge of the science of sanitation, and do not recognize any set principles, being merely governed by what has been satisfactory in some other place. So that if by some action of a Federal body or central authority, a set standard were established, it would prevent the useless experimenting and continual alteration of laws, and would serve the real purpose for which such laws are intended. There can be no serious objection to legislation along these lines, as already all the important cities and towns, with few exceptions, have some form of local legislation and

any attempt at unification should receive support. In Western Canada an organization of plumbing inspectors, master plumbers, and journeymen plumbers was formed last year, whose object was the establishing, by mutual consent, if possible, of a uniform system in Western Canada, to overcome the present chaos, due to the multiplicity of laws in operation at present. Sanitary plumbing has made greater headway in Western Canada than in the East. Realizing its importance, they are trying to meet the demands of the future by a universal system of installation, inspection and examining and licensing of plumbers, and it cannot be denied that, at the present time, in those towns which have these standards, they are obtaining as high a degree of efficient sanitary installation as anywhere in the world.

ACCOMMODATION IN HOTELS AND PUBLIC BUILDINGS

One serious phase of sanitary law at present is the neglect of administrators to fix a standard of requirements for the necessary accommodation to meet the demands in the various buildings within their jurisdiction. In many of our cities the conditions of our hotels are deplorable. The sanitary conveniences, having to serve as public utilities, are over-taxed, and in many instances a lack of cleanliness is apparent. In such cases one cannot but experience a feeling of repulsion when forced to use them. And with the abuses in these conveniences comes the consequent danger of carrying disease away from them. Many of our hotels at the present time lack the requisite number of conveniences, on their public floors, demanded by competent authorities, and it is a common thing to find many of them without conveniences, or with disgraceful makeshifts on some of their residential floors. It should be the aim of governing bodies to so legislate that there should be a maximum of necessary sanitary conveniences based on the average number of guests occupying each hotel, and that proper attention be given to the requirements of the portion serving the purposes of public conveniences, with due regard to their construction, so as to serve the best interests of public health.

Many of our large public and office buildings, including departmental stores, are lacking at the present time to such an extent in sanitary conveniences, that they become nuisances. One can enter many of them and find them taxed beyond their usefulness by large numbers who use these places as public comfort stations, to the detriment of those employed in them. In such cases, efforts should be made to reserve a place for those who by their duties are compelled to remain within the buildings.

Our factories produce the worst forms of abuses and the word

"sanitary" applied to some of them is a misnomer. Some of their so-called sanitary conveniences become so repulsive through lack of attention to requirements and cleanliness, that they are a menace to public health. It is a standing disgrace, that in some factories the sanitary equipment does service for both sexes. Sometimes the water-closets are used as urinals, which is liable to cause filthiness, and by such use they become a danger instead of a benefit. In all places where men are employed in numbers, urinals should be compulsory, both from the standpoint of health and for the conservation of water, because less is required for flushing. Due regard should also be paid to light and ventilation.

The conditions in apartment and rooming houses are exceedingly unsatisfactory ; the efforts to conserve and economize space have not only been applied in the living-rooms but also in the bath-rooms. Too many fixtures are crowded into the space made available for them. Legislation should specify the minimum cubical contents of bath-rooms as well as of living-rooms. In rooming houses particularly, there is a lack of attention to the requirements of those who have to live in such places, especially in some cases where office buildings have been turned into rooming-houses. It is not an uncommon thing to find one water-closet, without bath or lavatory accommodation, serving the needs of the occupants of whole flats. Then again we have to meet the attendant evils due to the economic circumstances of those who use their rooms, not only as sleeping, but as living-rooms, in which they cook their meals, making it necessary for them to use the water-closet and lavatory basins as slop receptacles. It should be a firmly established law that no houses of this kind should be erected, without at least the minimum number of necessary sanitary conveniences being installed.

ACCOMMODATION IN PRIVATE HOUSES

With the present overcrowding of many of our private houses, we face serious conditions by the overtaxing and misuse of sanitary conveniences. Dr. Hastings reported lately, that in Toronto alone, there were 3,000 houses originally intended for one family, that at present were harbouring from two to five families. On the other hand, we find large houses, with all the luxuries that wealth can command, fitted out with the finest equipment and installed under the best possible conditions regarding workmanship, and we recognize that these houses have the large measure of health protection they are seeking. In such cases, both architects and owners demand plenty of light and space for their bath-rooms and toilet accommodations. Contrast this with the crowded, ill-lighted, unventilated

conveniences of the smaller private houses and tenement flats with two to five families living under one roof ; then try to realize, that if it gives the protection desired in one, there is all the greater reason why legislation should be provided in the other to protect the great mass of struggling humanity.

EVILS OF SPECULATIVE BUILDING

One of the most disturbing factors to be faced is the speculative builder whose whole aim is the amount of profit he can make, and not the degree of efficiency he can provide, because he is not building for his own personal occupation, but for sale. With the competitive system prevailing, everything is kept down to such a minimum of cost, that all standards of efficiency are neglected, and supposedly attractive outside architecture is given more consideration than the conservation of the health of the future occupants. Even in those cities that have effective sanitary legislation they find at all times a desire on the part of speculative builders to encroach upon requirements of the law, and in many ways they are successful in doing so. When they cannot evade the law by using inferior materials, they will generally hire incompetent mechanics who sub-let work at such prices that competent men know that some means are being taken to avoid the law. The present time, when thousands of homes are being built annually, which will be the permanent residences of the future citizens of this country, is the opportune time for legislation. Immigrants have as much desire as our own people to have brighter and healthier homes where they can have the use of all the best devices for the safeguarding of health and the recognition of proper sanitary standards ; and they should be aided in that desire by such legislation as will guarantee them protection from the unjust exploitation being carried on by speculative builders.

PUBLIC COMFORT STATIONS

A great and growing need at the present time is the recognition by governing bodies of the necessity for public comfort stations. But one feels a sense of shame in having to admit that in the Dominion of Canada they are conspicuous by their absence. While some of our larger cities have met the public demand by the building of some in the public parks and popular resorts, still there is a decided absence of them where they are most needed, that is, in the busy sections of our cities. This is the reason that the demand is so great on the conveniences in our public buildings and hotels. The cities are practically making some of their property-holders assume the burdens they themselves should bear. This is an important problem and one that deserves more attention than ever it has

had in the past, and legislation should be enacted compelling the establishing of these stations in the busy centres, so as to satisfy a long-felt want.

NEED FOR SANITARY DRINKING FOUNTAINS

Providing sanitary drinking fountains in public places, as urged by the medical profession as a preventive of disease, is another means whereby the health of the nation can be conserved. While there has been a great deal of progress, still due regard has not been shown in the erection and installation of these necessities. Many times they are erected in inaccessible places and allowed to get into such a filthy condition that they become repugnant and dangerous. They should be erected in the most accessible places, where there is plenty of light and fresh air so as to keep them free from contamination, and they should be so installed that they will not become part of the ordinary sanitary system of any building without proper interception from the main drains.

NEED FOR UNIFICATION IN LEGISLATION

With the advances that are taking place in sanitary, heating and ventilating equipment, the necessity for forming a codification of the laws dealing therewith is increasingly felt. While there may be some impediments in the way, owing to the multiplicity of legislative enactments, still with co-operation these may be overcome.

Such states as Illinois, Ohio, Wisconsin and Massachusetts have adopted very successful state laws, granting enlarged powers to the Boards of Health and setting standards that have been found to operate successfully all over their respective states. State inspectors of plumbing are appointed, who are charged with examining and licensing the men who desire to engage in that occupation. Knowing the many constitutional difficulties that beset them, we feel encouraged to take similar steps to protect the lives of our people. Under our present system with our multiplicity of laws and the elasticity of many of them, the defects are manifold. The many interpretations put on our laws, due to lack of rigid forms of administration, is surprising. In many towns we find the administration left in the hands of an unsympathetic department, or men being employed as inspectors who have no knowledge of the occupation, and who have been selected purely for personal or political reasons. Hence, we may expect to find that low standards of workmanship, which are a menace to public health, are very common.

To realize what this means, we have only to compare the morbidity and mortality statistics of the highly protected towns with

those whose administration is lax. Most forms of disease are quite susceptible of abatement by a properly regulated, hygienic system of sanitation. Dust, filth, foul air, lack of light and ventilation, are very important factors in the spread of tuberculosis and acute contagious diseases. Taking five cities under similar conditions we find the following results in 1913 :

Deaths per 100,000	Tuberculosis	Typhoid
Toronto.....	95.7	10.4—5.3
Milwaukee.....	87.1*	11.5
Cleveland.....	129.3	14.1
Buffalo.....	126.6*	15.2
Montreal.....	208.06	20.55

These figures show a great difference between the highest and lowest city and they can be practically arranged in the same order as to the effectiveness of their sanitary legislation.

These convincing figures and facts prompt the efforts of medical men, sanitary engineers and practical plumbers to seek rigid laws governing the installation of such work.

At the present time Halifax, Montreal, Port Arthur, Moose Jaw, Saskatoon, Edmonton, and Calgary have examinations for plumbers, but no two cities or towns in the Dominion have similar laws. The mechanic, who for economic or other reasons, travels in search of employment, has to undergo the ordeal of qualifying in each of those towns on a different basis. By the adoption of a universal plan, the mechanics engaged in the plumbing industry, once qualifying, would be fitted to meet the conditions in all parts of the Dominion.

The business should be governed by stringent regulations, irrespective of obsolete and fallacious ideas, as the work demanded of plumbers will compare favourably with any other required in building, both for usefulness, and in the degree of intelligence and ability required.

PROPOSED FEDERAL LAW

Realizing that the cities and towns of the Dominion recognize the value and necessity of by-laws for the control of sanitation, ventilation, etc., and are making an endeavour to meet the situation by local regulations, it becomes imperative that the Federal Government should pass legislation that will serve as a minimum standard, leaving the cities free to supplement the Dominion law, by any special regulations that may seem to be necessary by reason of climatic conditions.

*Pulmonary tuberculosis only.

The advance of sanitary engineering has opened up an avenue whereby farmers and those living in rural districts can have all modern sanitary comforts, but the only measure of protection that can be afforded them, since they are all outside the reach of a city's by-laws, is a federal law, which would apply to the whole country.

GENERAL HEALTH REVIEW

The importance of the protection of human life should be the first consideration of every nation and any measure directed to that end should receive serious and earnest consideration. Every country to-day has to meet this new demand made by the advancement of science. It is to be regretted that in some of our cities we have such a high mortality rate and this is due in a great measure to the lack of recognition of sanitary law. The following comparison of the death-rate per 1,000 in 1913 in five important cities is instructive :

Toronto.....	12.9
Milwaukee.....	13.23
Cleveland.....	14.14
Buffalo.....	15.76
Montreal.....	21.51

Due regard should be shown to cleanliness, with rigid forms of periodical inspections by competent inspectors. Cost is a matter of minor importance as compared to the protection received from efficient plumbing. Again, lack of attention to ventilation has been a source of trouble and due regard should be paid to the securing of pure air, in all buildings. Stringent regulations should be drawn governing the use of the many mechanical appliances at present used for ventilation.

CONCLUSION

Every country in the world at present has had to face these problems in one form or another and the statutes of every state and nation are replete with laws concerning public health. Forty years ago plumbing was considered a luxury, but at the present time, sanitary plumbing is a necessity and within the reach of everybody, even dwellers in rural districts, and is now recognized as essential to public health.

The protection afforded by legislation has been the result of education, and some conditions once tolerated are now known as dangerous to life and are therefore controlled. But the matter has been so long left to the will of the individual cities and towns that any attempt to over-ride these privileges has been resented. With

the advance of science and a broader spirit recognizing the demands for a greater measure of protection of human life, some countries are now facing these problems by the introduction of state laws.

At the present time, with the power reposed in this Conservation Commission of recommending legislation for the advancement of the interests of the people of this Dominion, we are in a position to make as much progress in sanitation as any country in the world, showing that the conservation of human life in this Dominion is considered to be of supreme importance, and that the powers of governing are being used in the interest of the national welfare, with the aim of producing a healthy, happy race of people.



